Title (en)

CIRCUIT AND PHOTO SENSOR OVERLAP FOR BACKSIDE ILLUMINATION IMAGE SENSOR

Title (de)

SCHALTUNGS- UND FOTOSENSORÜBERLAPPUNG FÜR EINEN RÜCKSEITENBELEUCHTUNGS-BILDSENSOR

Title (fr)

CHEVAUCHEMENT DE CIRCUIT ET DE PHOTODÉTECTEUR POUR UN DÉTECTEUR D IMAGES À RÉTROÉCLAIRAGE

Publication

EP 2253017 B1 20220330 (EN)

Application

EP 09708988 A 20090202

Priority

- US 2735608 P 20080208
- US 5347608 A 20080321
- US 2009032898 W 20090202

Abstract (en)

[origin: US2009200624A1] A backside illuminated ("BSI") imaging sensor pixel includes a photodiode region and pixel circuitry. The photodiode region is disposed within a semiconductor die for accumulating an image charge in response to light incident upon a backside of the BSI imaging sensor pixel. The pixel circuitry includes transistor pixel circuitry disposed within the semiconductor die between a frontside of the semiconductor die and the photodiode region. At least a portion of the pixel circuitry overlaps the photodiode region.

IPC 8 full level

H01L 27/146 (2006.01); **H04N 25/00** (2023.01)

CPC (source: EP US)

H01L 27/14603 (2013.01 - EP US); **H01L 27/1464** (2013.01 - EP US); **H01L 27/14641** (2013.01 - EP US); **H04N 25/772** (2023.01 - EP); **H04N 25/79** (2023.01 - EP US); H01L 27/14627 (2013.01 - EP US)

Citation (examination)

- US 2006023109 A1 20060202 - MABUCHI KEIJI [JP], et al
- US 2006197007 A1 20060907 - IWABUCHI SHIN [JP], et al
- CHEN XU ET AL: "A new digital-pixel architecture for CMOS image sensor with pixel-level ADC and pulse width modulation using a 0.18 /spl mu/m CMOS technology", ELECTRON DEVICES AND SOLID-STATE CIRCUITS, 2003 IEEE CONFERENCE ON KOWLOON, HONG KONG DEC. 16-18, 2003, PISCATAWAY, NJ, USA,IEEE, 16 December 2003 (2003-12-16), pages 265 - 268, XP010695857, ISBN: 978-0-7803-7749-3, DOI: 10.1109/EDSSC.2003.1283528

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

US 2009200624 A1 20090813; **US 8101978 B2 20120124**; CN 101939841 A 20110105; CN 101939841 B 20130501; EP 2253017 A1 20101124; EP 2253017 B1 20220330; JP 2011512033 A 20110414; JP 2013062539 A 20130404; JP 5166557 B2 20130321; KR 101129128 B1 20120327; KR 20100119860 A 20101111; TW 200950076 A 20091201; TW I406402 B 20130821; US 2012086844 A1 20120412; US 8228411 B2 20120724; WO 2009100039 A1 20090813

DOCDB simple family (application)

US 5347608 A 20080321; CN 200980104585 A 20090202; EP 09708988 A 20090202; JP 2010545945 A 20090202; JP 2012278115 A 20121220; KR 20107017059 A 20090202; TW 98103973 A 20090206; US 2009032898 W 20090202; US 201113327592 A 20111215